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APPENDIX II.

[Vide answer to question No. 1656 asked by Mr. A. B. Shetty at the meeting of the Legislative Council held on the 27th March 1930, page 619 supra.]

Findings of the Conference of Gazetted Officers of the Agricultural Department held in January 1930.

Demonstration areas and plots.—(a) The term 'demonstration plots' should be reserved for use in connexion with those plots which are intended to demonstrate the advantage of an innovation of any sort, which has been thoroughly tested and found to be sound.

The 'demonstration plot' should consist of two strips placed side by side in the same field. One plot will be 'treated' according to the item to be demonstrated. The other plot will be 'untreated'. The strips may vary in size from 1 to $\frac{1}{2}$ an acre.

Demonstrators will take all necessary precautions to see that the demonstration is given a fair chance of success, but need not weigh the produce of the two strips. Demonstrations should always be carried out with the active co-operation of the interested cultivator.

Demonstration plots should never be used to obtain information as to the effect of a 'treatment.' Information of this nature should be obtained from 'trial plots.'

The terms 'demonstration farm' and 'demonstration areas' should cease to be used.

(b) *Trial plots.*—This term should be reserved for strip tests of any innovation carried out under cultivator's conditions. No innovation should be tried out under cultivator's conditions until it has first been tested on the nearest research station and has been found to show distinct promise of success. No innovation should be recommended to cultivators until it has been tested under cultivator's conditions and has been found to be satisfactory.

The normal arrangement of the strips in a trial plot will be A. B. B. A. The size of the strip may vary from 5 to 10 cents according to the innovation being tested.

The test will be carried out with the same rigorous attention to detail and care in recording results as is given on the research stations.

Demonstrators will not ordinarily be expected to manage 'trial plots'. This should normally be the duty of an officer from the research station deputed for the purpose. The district staff, however, will collaborate in making arrangements for the test to be conducted.

2. *Agricultural demonstrators*—(a) *Jurisdiction.*—The ratio already fixed of one taluk per demonstrator will continue unchanged. As, however, the number of villages per taluk is 100 or more and as the demonstrator cannot be on tour for more than 20 days a month on the average, he should not attempt to visit every village every year.

The taluk should be divided into not less than three areas. In each area one village should be selected to serve as a centre. At this centre the demonstrator will arrange for demonstration plots, and will endeavour to get the cultivators from the other villages in the area to visit the centre.

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Demonstration will continue at these centres until it is evident that the cultivators have grasped the ideas when a move to a new village in the area will be made and the process continued.

(b) *Depots*.—If depots have to be maintained by the department, they should be kept open regularly on all working days so that ryots may know that whenever they come to the depot on a working day their wants will receive attention. It is useless to run a depot which is open for an irregular number of days at irregular intervals when the demonstrator happens to be at headquarters. Every depot maintained by the Department should therefore have a regular attendant capable of maintaining proper accounts.

In order to minimise the number of such attendants that will be required and in order to free the demonstrator from office work which militates against his exercising his proper functions, the plan of maintaining a central depot at the headquarters of the District Agricultural Officer to supply agents in the villages should be tried. The central depot should be in the charge of a storekeeper on the ordinary clerk's pay of Rs. 35 to Rs. 60, who should be required to give security. The agents in the villages should be private individuals of known probity or organization like co-operative societies, village panchayats or village agricultural associations.

(c) *Show-rooms*.—Every District Agricultural Officer should have a well equipped show-room at his headquarters. Here will be maintained a range of posters and exhibits dealing with items of propaganda of use in the particular district and leaflets and literature for distribution. The posters and exhibits should be kept fresh and up to date and the collection should be as interesting and instructive as possible. It should never be allowed to get musty, flyblown and lifeless in appearance.

(d) *Training of demonstrators*.—All new recruits should be on probation for three years. They should be posted first to a research station and should be kept there for one year. At the end of that time it should be apparent whether they are better fitted for research or demonstration. During the second year they will continue to work on the station if deemed better fitted for research or if considered to be better fitted for demonstration work will be sent to work under an experienced demonstrator. During the third year they will be given independent work to do, and will be confirmed if this is done satisfactorily. Any officer who shows that he is not likely to be useful in either capacity should not be kept on after this has been discovered even if his probationary period is not completed.

(e) *Reduction of office work*.—Agricultural demonstrators are burdened with an excessive amount of office work which seriously affects their efficiency as demonstrators. The main items responsible for this state of affairs are :—

- (a) Depots,
- (b) Wages and batta of messengers,
- (c) Pay and travelling allowance of maistris,
- (d) Their own travelling allowance bills, and
- (e) Weekly diaries.

(a) The cure here is to relieve the demonstrators of the charge of depots altogether.

(b) Although the demonstrator needs a messenger continuously and although it is obvious that an experienced man is more useful even as a messenger than an inexperienced man, messengers are treated as casual coolies and are paid as such. This necessitates the preparation of vouchers

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involving a number of calculations which wastes a great deal of time and the periodical discharge and reappointment of the messenger with further waste of time when a new man is employed. All this can be avoided if messengers are employed on monthly wages, as temporary peons are paid the same monthly rate of pay as peons and a fixed travelling allowance of Rs. 5 per month.

(c) In this case and in the next (d) the preparation of the travelling allowance bills is a waste of time. Both maistris and demonstrators have to be on tour for 20 days in the month and in both cases a fixed travelling allowance would avoid the necessity of preparing bills and would not raise the expenditure under this head. The rates suggested are Rs. 10 for maistris. The rates for the lower and upper subordinates will have to be worked out, but will probably range about Rs. 30 for the former and Rs. 45 for the latter.

(e) This should be written up day by day, instead of at the end of the week as at present. The forms used for the purpose should be ruled, perforated and bound. A copying ink pencil should be used for writing the original which should be sent to the District Agricultural Officer regularly once a week.

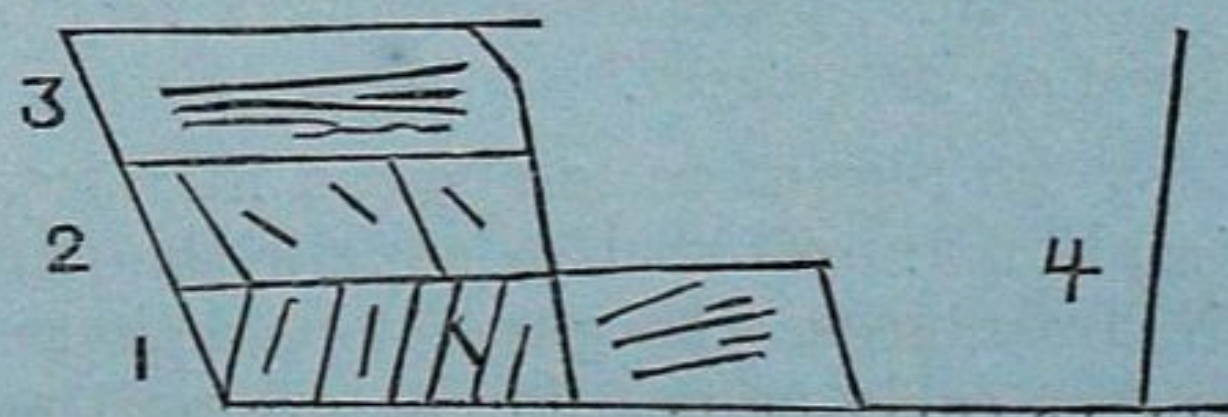
3. *Maistris*—(a) *Training*.—Maistris should be recruited from a cultivating class and should be trained on the research station nearest to the area in which he is employed.

(b) *Number required*.—For the present each demonstrator should have one maistri.

(c) *Pay*.—There should be two grades only, viz., Rs. 20—1—25 and Rs. 25—1—30.

4. *General items of propaganda*.—There are certain items of propaganda which are not specific to particular tracts but are of general application. These items every demonstrator should endeavour to push in season and out of season. These items are:—

(a) *Proper method of manufacture of cattle manure*.—The basic idea here is that the cattle should be stalled in some form of a loose box not very deep—one foot depth will do—with a hard floor. On this floor dry earth should be spread to a depth of about six inches. On this such litter as is available should be spread daily, before the cattle are stalled at night. Cultivators should be advised to chop their dry fodder into lengths of about four inches and to spread refuse fodder and such other organic matter as can be so used in the cattle stalls. Green leaf is very useful for this purpose but it should not be used in wet weather or when the cattle have to remain in the stalls all day, as in such circumstances the bed of the stall gets very miry. When the depth of material in the stalls has increased to one foot, the organic matter and dung and a certain amount of the earth should be removed and put in a pit neatly, not just thrown in anyhow, and should be covered with earth. The earth left in the stall should be stirred up and fresh earth added to make up for the earth removed and the process repeated. As each lot of manure is removed from the stall to the pit it should be put on top of the last lot until that section of the pit is filled when a new section will be started—see sketch.



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(b) *Manufacture of compost*.—Organic matter should not be burnt. Such of it as can be used as litter in the cattle-sheds should be used there. The rest should be pitted in the manner described in the Villagers' Calendar.

(c) *Proper preservation of night-soil*.—Wherever possible this should be encouraged and the possibility of using bore-hole latrines should be investigated.

(d) *Field management*.—

- (1) Clean cultivation to eradicate all weeds.
- (2) Mulching to preserve moisture.
- (3) Ploughing or cultivation as soon as the crop is harvested. There should be no long interval between harvest and this operation.
- (4) Deep cultivation if a pan is to be broken.
- (5) Levelling of fields.
- (6) Enlargement of fields, consolidation of holdings.
- (7) Forming bunds.

(e) *Rotation of crops*.—The existing rotations in each circle should be examined and suggestions made for improving on these. Further action will depend on these reports.

(f) *Preservation of seed*.—Methods in vogue should be examined and reported upon.

(g) *Maintenance of cattle*.—Need for care in housing and feeding should be emphasized.

The possibilities of growing fodder crops, e.g., sunnhemp, cholam and cumbu, should be examined and discussed with cultivators who should be encouraged to do this wherever possible. Where the conditions are favourable for the making of silage, e.g., on the West Coast, the possibilities of this form of fodder preservation should be announced.

All owners of cattle should be advised to use oil-cake for feeding their cattle.

Every village should have at least one good breeding bull of the breed suitable to the locality.

5. *Specific items of propaganda*—(a) Manures—

(1) *Paddy*.—The general plan of manuring for this crop should be green manure, sulphate of ammonia and a phosphatic manure, e.g., bone-meal, ordinary supers or concentrated supers. About 4,000 lb. of green manure per acre, one bag of sulphate of ammonia and one or one and a half bags of ordinary supers appears to be a fair dressing for paddy.

(2) *Sugarcane*.—The optimum dose of nitrogen for this crop appears to be about 100 lb. Part of this nitrogen, about two-thirds, should be in the form of oil-cake. The remainder may be in the form of sulphate of ammonia, phosphatic manure to give 30 to 50 lb. P_2O_5 may be applied direct or indirectly.

In regard to compound manures such as ammophos as compared with simple manures such as supers, the choice of manure to be used depends on circumstances. In general phosphatic manures should be turned into the land as early as possible before putting in the crop. Where it is desired to apply nitrogen at a specific time during the growing of the crop compound

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manures cannot be used, but where the time of application of the nitrogen can be the same as that of the P_2O_5 , then a compound manure has distinct advantages.

(b) *Methods of cultivation*—

(i) *Paddy*.—Thin sowing of seed-beds as before, to be advocated.

(ii) *Sugarcane*.—Line planting is better than broadcasting of setts. The distance from line to line should be 3 feet and the rate of sowing should be about 12,000 setts per acre. The use of crude oil emulsion as a preventive of white ant attack should be advertised, as also the wisdom of selecting healthy setts.

The possibility of making use of the 'short planting' system for providing seed canes should be considered in those circles where the practice does not exist.

(iii) *Other crops*.—In general drilling and intercultivation by bullock power should be advocated in preference to broadcasting.

(c) *Strains*.—The procedure in regard to the introduction of new strains into a district is to be that outlined under "trial plots". The Superintendent of the Research Station or the Crop Specialist as the case may be will maintain stocks of seed of strains undergoing test on trial plots until the test is finished, when if the test gives a favourable result he will hand over as large a quantity as possible to the Deputy Director who will then make his own arrangements for multiplying it. Small lots of pure strain should always be available on the nearest Research station capable of growing the strain in question.

6. *Seed—Increase of supply*—(a) *General*.—The sooner the demonstrator is free of the work of supplying seed to the cultivator the better. In all cases the cultivator should be advised, encouraged and shown how to arrange for his own supply. The supply of seed is a very useful means of starting village agricultural associations as it provides at definite purpose for which to work. Every circle should endeavour to get such associations started in the centres discussed under 2 (a).

These associations may be formed for any purpose, production of seed, maintenance of a breeding bull or the purchase of plough, etc. They should be registered.

(b) *Green manure seeds*.—The following circles can supply the green manure seeds noted against them:—

| | | | | | |
|--------------------|-----|-----|-----|-----|--------------|
| I Circle | ... | ... | ... | ... | Dhaincha. |
| II and III Circles | ... | ... | ... | ... | Indigo. |
| V and VI Circles | ... | ... | ... | ... | Wild indigo. |
| II Circle | ... | ... | ... | ... | Sunnhemp. |

Circle officers requiring seed should apply to the Director of Agriculture in time who will forward the indents to the officer concerned. The supplying officer will call for tenders and having selected a tender will then arrange for the tenderer to supply the seed direct. Supplying officers should inform the Director of Agriculture when supplies are likely to be ready.

(c) *Seed-testing*.—There is a need for a central seed-testing establishment. It was decided that the Lecturing Botanist should undertake to do this work.

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7. *Implements—Suitable types—Methods of cheapening prices—*
 (i) *Ploughs.*—The Director of Agriculture's scheme for stimulating the sale of ploughs was approved, and his proposal to limit the type of ploughs under demonstration to three was adopted.

(ii) *Roll-easy mhote wheel.*—Present attitude to continue.

(iii) The discussion revealed the fact that a really satisfactory mill capable of dealing effectively with both hard and soft canes had not yet been found. Further trial was indicated.

(iv) *Chaffcutter.*—A type of cutter that will cut fodder into 4-inch lengths is required and will have to be devised.

(v) *Mhote buckets.*—Suggestions for improvements are required.

(vi) *Tractors.*—The department should again take up the testing of tractors.

Until we are in a position to advise definitely, commonsense should be used in giving advice to prospective buyers. The main point to see to is that the would-be tractor owner has the prospect of sufficient work to keep the tractor economically employed.

(vii) Types of machines for harvesting, threshing and winnowing at prices within reasonable reach of the cultivator are required.

(viii) District officers should send up suggestions to the Research Engineer.

8. *Pests—Diseases—Live-stock.*—In each circle there should be at least one officer trained by the Deputy Director of Agriculture, Live-stock, to advise on matters connected with live-stock. Similarly there should be one officer trained in plant sanitation in each circle. The latter officer would in all probability be attached to the research station.

On each research station if possible a breeding bull and a certain number of cows should be maintained, sufficient to supply milk to the officers on the station and to rear calves properly.

9. *Exhibition vans, etc.*—(i) Exhibition vans should not be attached to a circle for more than four months at a time. Vans should spend at least three nights at each halting place.

(ii) *Exhibitions.*—There should be at least one good exhibition in the year at an important centre.

(iii) Parties of ryots should be taken to tracts or stations where special methods have to be studied.

(iv) Each district should be provided with a lantern and as the cultivators got tired of seeing the same slides over and over again the range of slides should be widened and new methods of presenting the same idea should be worked out.

As conditions vary from district to district and as it is essential to be able to take advantage of opportunities of obtaining interesting, instructive and effective slides it is necessary that each circle should be provided with a camera and an officer capable of using it and of preparing slides. The same officer can also be usefully employed in keeping exhibits and posters up to date in depots and helping demonstrators with such aids in delivering instructive lectures.

10. *Publications—Revision of leaflets, etc.*—This was agreed upon.